# LNG Access Workshop

## Sacramento

June 1-2, 2005

## Financing LNG Receiving Terminals

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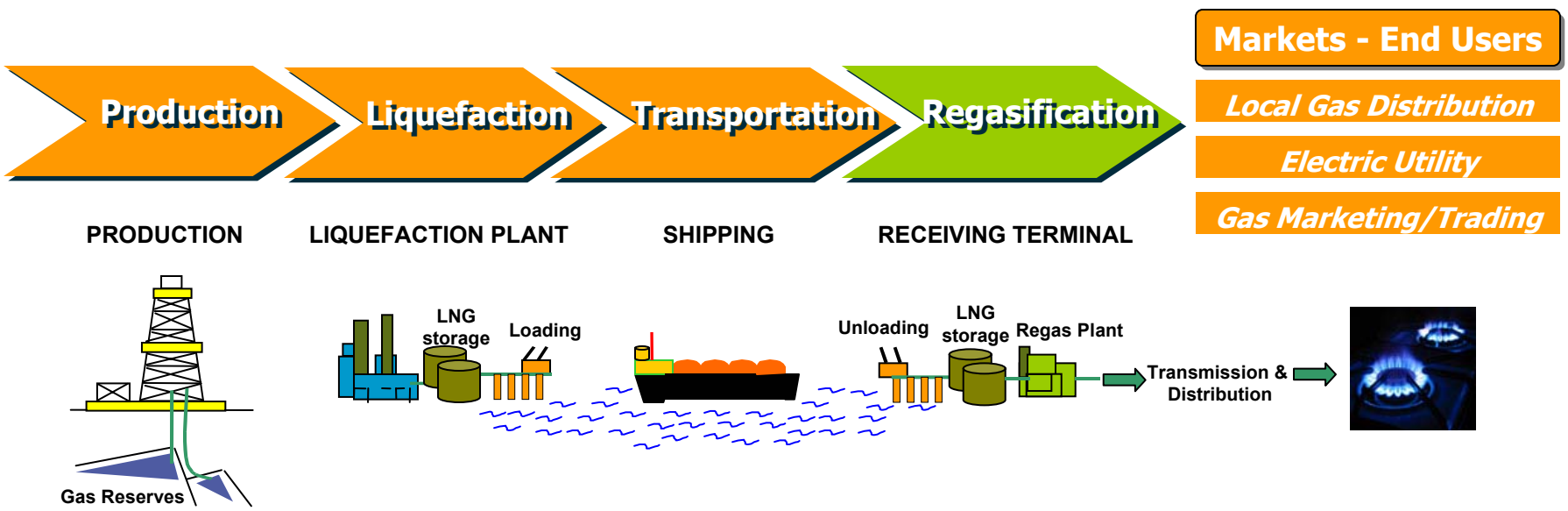
Australia and New Zealand Banking Group Ltd

## ANZ Overview

- Australia and New Zealand Banking Group Limited (ANZ)
- Established as Bank of Australasia in 1835; head office in Melbourne, Australia
- Total assets of over USD180 bil; one of the top 100 banks globally
- Long Term credit ratings of AA- (S&P) and Aa3 (Moodys)
- Offices in over 25 countries
- Experience in advisory and debt arranging across LNG chain
- LNG specialist teams located in London, New York and Singapore




# ANZ Experience along the LNG Chain




- Egypt LNG
- Nigeria LNG
- Oman LNG

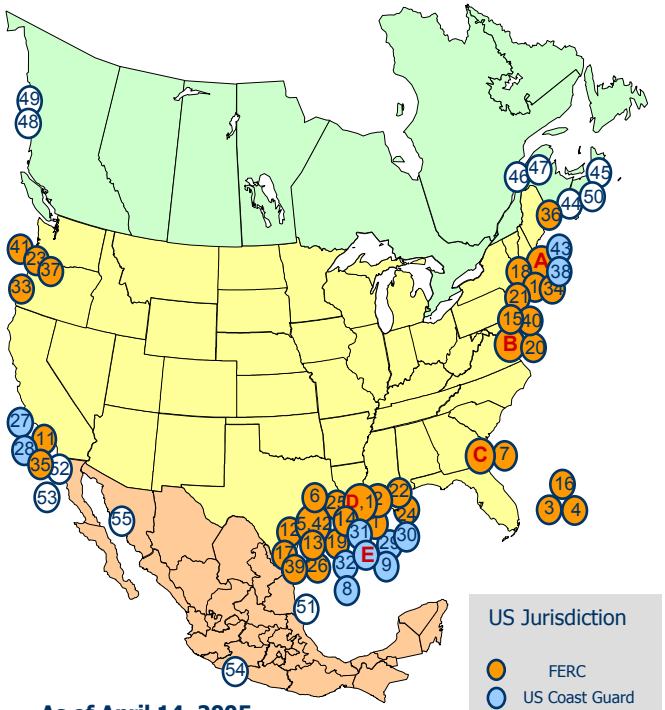
- Guangdong (China)
- Ras Gas II (Qatar)
- MISC (Malaysia)
- Petronet (India)
- Bonny Gas (Nigeria)
- Greenfield Shipping (India)

- Sabine Pass (USA)
- Kakinada (India)
- Dahej (India)
- Guangdong (China)




# *FERC*–Existing, Proposed and Potential North American LNG Terminals

- Total of **65.3 Bcfd** counted by FERC as of May 17, 2005
- 5 existing regas terminals at 4.215 Bcfd
- 58 additional proposed and potential terminals aggregating 61.1 Bcfd
- Where will it balance out? FERC says 8 terminals.




**As of April 14, 2005**

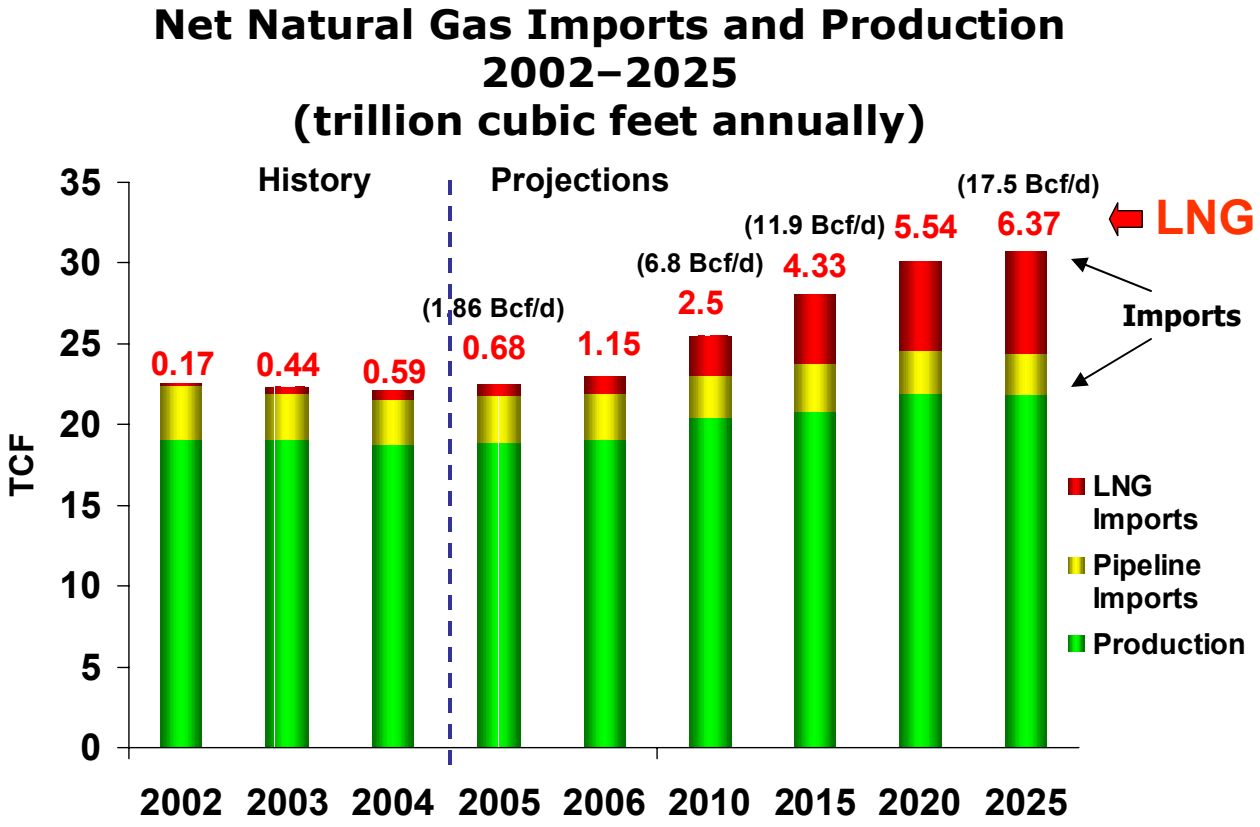
* *US pipeline approved; LNG terminal pending in Bahamas*
** *These projects have been approved by the Mexican and Canadian Authorities*

***Office of Energy Projects***

**CONSTRUCTED**
**A. Everett, MA :** 1.035 Bcfd (Tractebel - DOMAC)
**B. Cove Point, MD :** 1.0 Bcfd (Dominion - Cove Point LNG)
**C. Elba Island, GA :** 0.68 Bcfd (El Paso - Southern LNG)
**D. Lake Charles, LA :** 1.0 Bcfd (Southern Union - Trunkline LNG)
**E. Gulf of Mexico:** 0.5 Bcfd, (Gulf Gateway Energy Bridge - Excelerate Energy)
**APPROVED BY FERC**
**1. Lake Charles, LA:** 1.1 Bcfd (Southern Union - Trunkline LNG)
**2. Hackberry, LA :** 1.5 Bcfd, (Sempra Energy)
**3. Bahamas :** 0.84 Bcfd, (AES Ocean Express) *
**4. Bahamas :** 0.83 Bcfd, (Calypso Tractebel) *
**5. Freeport, TX :** 1.5 Bcfd, (Cheniere/Freeport LNG Dev.)
**6. Sabine, LA :** 2.6 Bcfd (Cheniere LNG)
**7. Elba Island, GA:** 0.54 Bcfd (El Paso - Southern LNG)
**12. Corpus Christi, TX :** 2.6 Bcfd, (Cheniere LNG)
**APPROVED BY MARAD/COAST GUARD**
**8. Port Pelican:** 1.6 Bcfd, (Chevron Texaco)
**9. Louisiana Offshore :** 1.0 Bcfd (Gulf Landing - Shell)
**PROPOSED TO FERC**
**10. Fall River, MA :** 0.8 Bcfd, (Weaver's Cove Energy/Hess LNG)
**11. Long Beach, CA :** 0.7 Bcfd, (Mitsubishi/ConocoPhillips - Sound Energy Solutions)
**13. Corpus Christi, TX :** 1.0 Bcfd (Vista Del Sol - ExxonMobil)
**14. Sabine, TX :** 1.0 Bcfd (Golden Pass - ExxonMobil)
**15. Logan Township, NJ :** 1.2 Bcfd (Crown Landing LNG - BP)
**16. Bahamas :** 0.5 Bcfd, (Seafarer - El Paso/FPL )
**17. Corpus Christi, TX:** 1.0 Bcfd (Ingleside Energy - Occidental Energy Ventures)
**18. Providence, RI :** 0.5 Bcfd (Keyspan & BG LNG)
**19. Port Arthur, TX:** 1.5 Bcfd (Sempra)
**20. Cove Point, MD :** 0.8 Bcfd (Dominion)
**21. LI Sound, NY:** 1.0 Bcfd (Broadwater Energy - TransCanada/Shell)
**22. Pascagoula, MS:** 1.0 Bcfd (Gulf LNG Energy LLC)
**23. Bradwood, OR:** 1.0 Bcfd (Northern Star LNG - Northern Star Natural Gas LLC)
**24. Pascagoula, MS:** 1.3 Bcfd (Casotte Landing - ChevronTexaco)
**25. Cameron, LA:** 3.3 Bcfd (Creole Trail LNG - Cheniere LNG)
**26. Port Lavaca, TX:** 1.0 Bcfd (Calhoun LNG - Gulf Coast LNG Partners)
**PROPOSED TO MARAD/COAST GUARD**
**27. California Offshore**: 1.5 Bcfd (Cabrillo Port - BHP Billiton)
**28. So. California Offshore :** 0.5 Bcfd, (Crystal Energy)
**29. Louisiana Offshore :** 1.0 Bcfd (Main Pass McMoRan Exp.)
**30. Gulf of Mexico:** 1.0 Bcfd (Compass Port - ConocoPhillips)
**31. Gulf of Mexico:** 2.8 Bcfd (Pearl Crossing - ExxonMobil)
**32. Gulf of Mexico:** 1.5 Bcfd (Beacon Port Clean Energy Terminal - ConocoPhillips)
**POTENTIAL SITES IDENTIFIED BY PROJECT SPONSORS**
**33. Coos Bay, OR:** 0.13 Bcfd, (Energy Projects Development)
**34. Somerset, MA:** 0.65 Bcfd (Somerset LNG)
**35. California - Offshore:** 0.75 Bcfd, (Chevron Texaco)
**36. Pleasant Point, ME :** 0.5 Bcf/d (Quoddy Bay, LLC)
**37. St. Helens, OR:** 0.7 Bcfd (Port Westward LNG LLC)
**38. Offshore Boston, MA:** 0.8 Bcfd (Northeast Gateway - Excelerate Energy)
**39. Galveston, TX:** 1.2 Bcfd (Pelican Island - BP)
**40. Philadelphia, PA:** 0.6 Bcfd (Freedom Energy Center - PGW)
**41. Astoria, OR:** 1.0 Bcfd (Skipanon LNG - Calpine)
**42. Freeport, TX:** 1.5 Bcfd, (Cheniere/Freeport LNG Dev. - Expansion)
**43. Offshore Boston, MA:** 0.4 Bcfd (Neptune LNG - Tractebel)
**CANADIAN APPROVED AND POTENTIAL TERMINALS**
**44. St. John, NB :** 1.0 Bcfd, (Canaport - Irving Oil)
**45. Point Tupper, NS** 1.0 Bcf/d (Bear Head LNG - Anadarko)
**46. Quebec City, QC :** 0.5 Bcfd (Project Rabaska - Enbridge/Gaz Met/Gaz de France)
**47. Rivière-du- Loup, QC:** 0.5 Bcfd (Cacouna Energy - TransCanada/PetroCanada)
**48. Kitimat, BC:** 0.61 Bcfd (Galveston LNG)
**49. Prince Rupert, BC:** 0.30 Bcfd (WestPac Terminals)
**50. Goldboro, NS** 1.0 Bcfd (Keltic Petrochemicals)
**MEXICAN APPROVED AND POTENTIAL TERMINALS**
**51. Altamira, Tamulipas :** 0.7 Bcfd, (Shell/Total/Mitsui) **
**52. Baja California, MX :** 1.0 Bcfd, (Sempra & Shell)**
**53. Baja California - Offshore :** 1.4 Bcfd, (Chevron Texaco)
**54. Lázaro Cárdenas, MX :** 0.5 Bcfd (Tractebel/Repsol)
**55. Puerto Libertad, MX:** 1.3 Bcfd (Sonora Pacific LNG)

# LNG fills gap between gas demand and production

- Most of the increase in U.S. net imports from 2003 through 2025 is expected to come from LNG, as Canadian imports decline.
- U.S. LNG imports anticipated to grow from 0.6 Tcf /year in 2004 to to 4.3 Tcf by 2015




*Source: Energy Information Administration, Short Term Energy Outlook*, April 2005, and *Annual Energy Outlook 2005.*

## How many import LNG Terminals?

| | 2010 | 2015 |
|---|---|---|
| US Natural Gas Demand (Tcf) | 25.5 | 28.1 |
| Less: US Gas Production (Tcf) | 20.4 | 20.8 |
| "Gap" – Demand / Production (Tcf) | = 5.1 | =7.3 |
| Less: Pipeline Imports (Tcf) | 2.6 | 3.0 |
| **LNG Import Estimate** | **=2.5 Tcf<br>6.8 Bcfd** | **=4.3 Tcf<br>11.9 Bcfd** |
| Less: 5 Existing Terminals "expanded" (Bcfd-base)<br>*-Everett, Cove Point, Elba, Lake Charles, Energy Bridge* | 5.4 | 5.4 |
| Less: 3 New Terminals in advanced stages (Bcfd)<br>*- Sabine Pass (2.6 Bcfd); Freeport (1.5 Bcfd); Costa Azul (0.5 Bcfd to US)* | 4.6 | 4.6 |
| **Other Terminals Needed to Build (Overbuild)** | **=(3.2 Bcfd)** | **=1.9 Bcfd** |

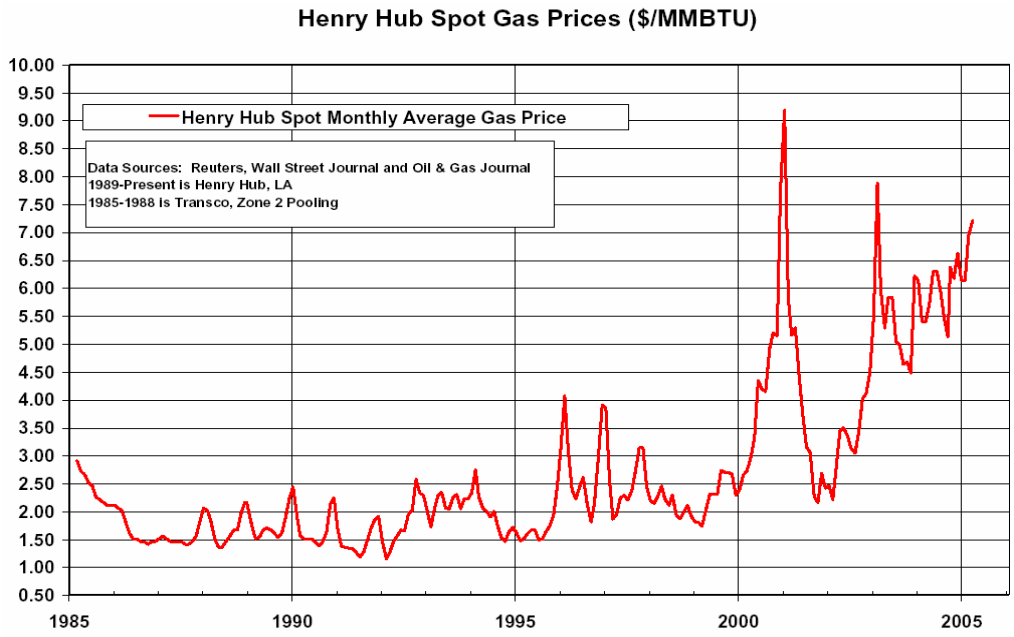
***"Gap" may require only 6 regas terminals in US***

## Financing Backdrop

- 58 proposed regas developments in North America – only a much smaller subset will get built
- Race to build regas terminals in US with "first mover" advantage suggests need for efficient and expedited financing process
- Receiving terminal stands in middle of the value chain, straddling both upstream and downstream risks
- With proper structuring of commercial contracts these terminals are readily financeable and debt markets are buoyant and receptive
- Financeable on basis of either "closed" or "open" access
  - *Closed-access* regime from FERC's Dec 2002 Hackberry decision is a much simpler structure for lenders and facilitates an expedited process and stable environment with long term contracts and fewer counterparties
  - *Open-access* can be accommodated if open season process results in sufficient long term anchor contracts to support financing similar to natural gas pipelines. Financing process likely prolonged with much effort devoted toward harmonizing multiple contract arrangements.

# Natural Gas Prices

- High natural gas prices in US is the ***rose*** driving LNG development**.....**
- **.....**but price level and volatility is also the ***thorn*** – particularly for risk averse lenders following market dislocations of 2001
- Key risks for lenders are throughput "volume" and commodity "price"



# 4 major project financing structures for Terminals

**Tolling**

- "Tolling" or Terminal Use Agreement (TUA) provides **contracted** capacity
- A fixed service fee supports stand-alone financing

**Integrated**

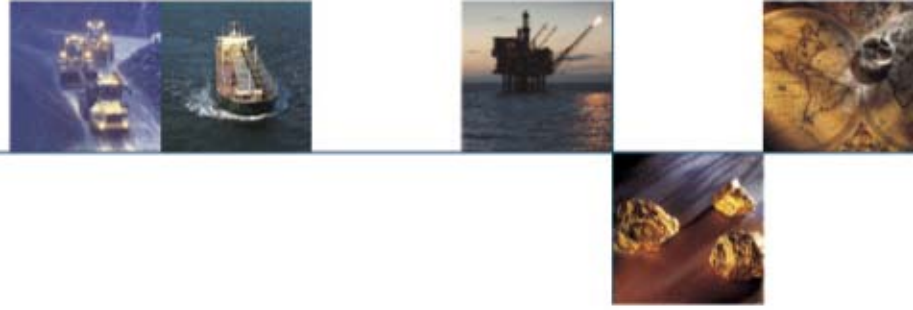
- A single comprehensive or series of interrelated financings based on **connected contracts** across the LNG chain linking overall project economics.

**Rate Base**

- Terminal is owned by a regulated gas utility that raises financing on its overall **corporate** credit standing
- May separately structure a project financing with utility acting as terminal counterparty

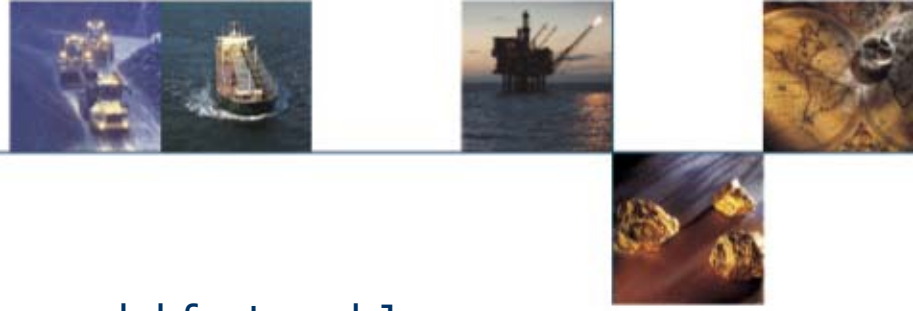
**Merchant**

- Merchant terminal is largely **un-contracted** and subject to volume and price risk



# 1. Tolling

- "Tolling" structure emerging as preferred project finance format in US for LNG receiving terminals
  - *Sabine Pass*-Cheniere
  - *Freeport-Cheniere/Freeport LNG Development*
- TUA is a "take-or-pay" with rights to terminal capacity; contracted cash flow inoculates regas project against LNG price, throughput and supply risks by ring-fencing (though these risks survive "behind the curtain")
- Terminal provides a service and does not take title to LNG; counterparty responsible for volume and price risk;
- Strong credit standing of counterparty is vital for project financing
- Typical counterparties are LNG suppliers ("push") or gas buyers ("pull")
- Tolling format also taking hold in European terminals where 10-20 new terminals could be built by 2010
  - *Brindisi LNG Spa–BG/Enel* (Italy)
  - *Dragon LNG Ltd–BG/Petronas* (UK-Wales)
  - *Bilbao Bahia de Bizkaia –BP/Repsol/Iberdrola/EVE* (Spain)



## 2. Integrated

- Traditional non-recourse LNG financing model featured Japanese-style long term "take-or-pay" contracts with end-user purchaser utilities that established economics across the chain
- Generally, utility offtakers gave firm volume takes with some price risk flowing back to suppliers through "net-back" adjustments
- Expect to see super-major producers more prevalent as sponsors involved at all levels of the chain in coordinated investments, from upstream to downstream marketing
- Single dedicated supply chain with possible multiple terminal destinations where majors can access key markets
- Project-on-project risk along the chain sewn together by back-to-back contracts
  - Operating margins and cash flow allocations at each supply step (regas, shipping, liquefaction) are extracted to pay-down separate debt tranches
  - Risk is force majeure or other breakdown in the integrated cash generation system
- Examples: *Guangdong Dapeng LNG; Qatar Gas II*

## 3. Merchant

- Without contracts to mitigate price and volume risks, a merchant model will be difficult and likely not be bankable.
- Natural order has lead to significant spare capacity and low 45% utilization of 39.7 Bcfd (2003) global capacity of receiving terminals
  - partly due to seasonality and peak load requirements
  - Anticipate some regas overbuild in US given deregulation, greater competition and movement by majors into investment in terminals
  - Regasification is the least capital intensive side of LNG chain (after liquefaction and shipping) with fewer barriers to entry
- US market could have more peaking characteristics than other geographic areas
- Price of gas in destination market entirely drives financial performance of the entire chain in US and Europe which is a change in LNG's historical price relationship to an oil cocktail
- Lenders will continue to seek mitigation of price risk through contractual arrangements with terminal sponsors/ developers/ offtakers

## US Financing standards emerging

- Typical terminal size in US is 1-1.5 Bcfd
- 6-8 terminals require US$3.5-5bn in aggregate debt financing
- Unit cost approximately US$400-800 million per 1 Bcfd capacity
- Contracted / tolling financing model will likely continue with wide application in US as simplest and least complex structure
- Debt tenors are 10-15 years (inclusive of 3-4 years construction) with refinancing balloon at maturity based on 20-year amortization
- Debt leverage in 75-85% range
- Pricing in LIBOR + 125-150 bps range
- DSCR at 1.5x
- Banks typically provide flexible construction funding with anticipated longer term refinancing in private placement (Reg D) and bond (144A) markets

## Challenges

- Challenge going forward for all parties is changing market dynamics that have more pronounced volume and supply uncertainty:
  - Movement away from traditional Japanese-style take-or-pays
  - Anticipate multiple supply chains and offtake markets
  - Shorter contractual arrangements, smaller volumes and more flexible purchase and supply terms
- Greater competitiveness is changing the business dimensions and need for more flexibility and options in moving "stranded" gas to whichever markets, particularly in US and Europe, that have high prevailing natural gas prices
- Generally, early project financing structures are over-engineered whilst later ones push the boundaries
- Can anticipate hybrid structures, multiple counterparties and sponsors, multiple financing sources and debt tranches, more back-ended merchant component

## Conclusions

- Window of opportunity today for additional LNG into US
- Regasification terminal capacity being built in next 2-4 years will be bankable and financing parties are eager to participate in the sector
- Integrated producers that currently hold 29% of global liquefaction capacity are expected to expand their domination of LNG supplies and rights to or investments in receiving terminal capacity